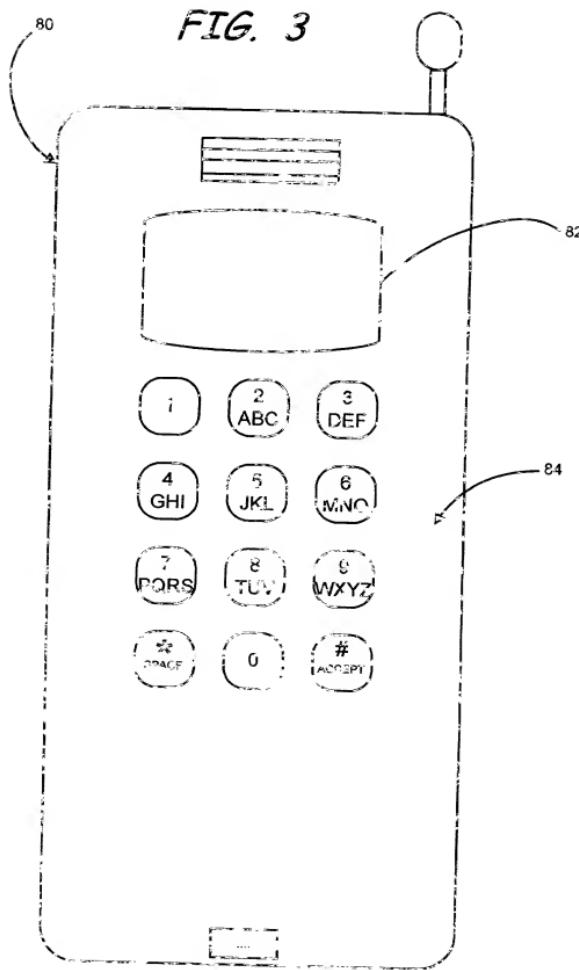


FIG.2

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FIG. 3



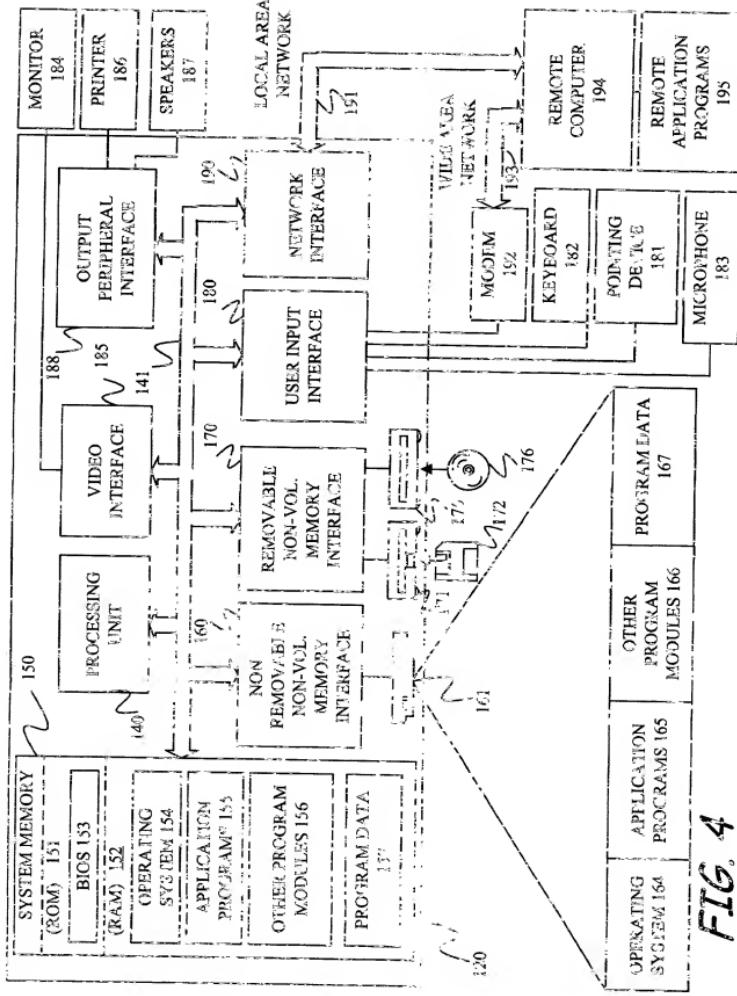
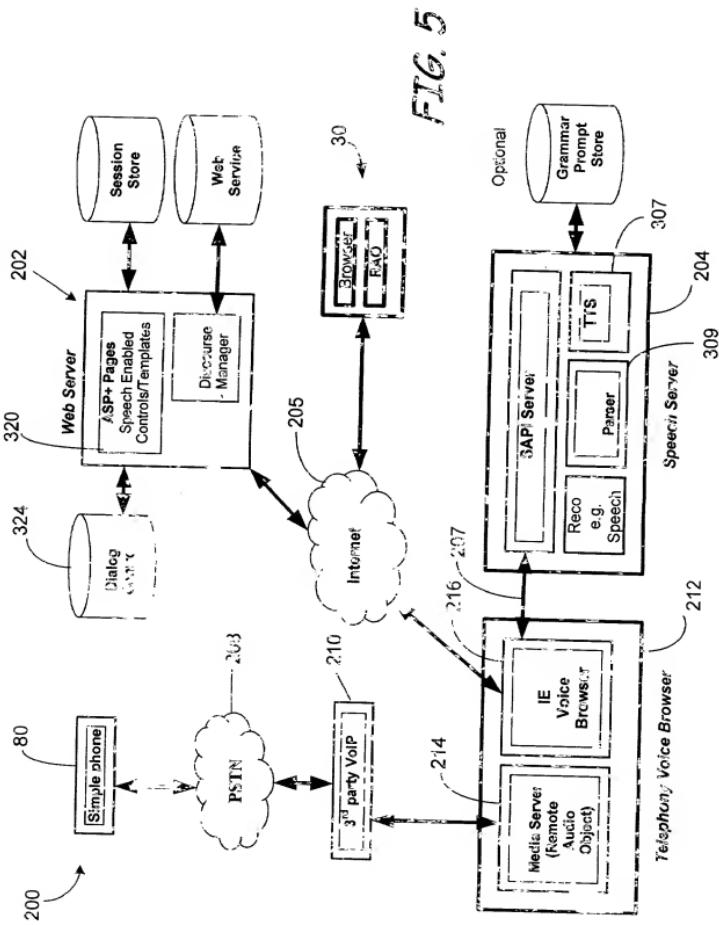


FIG. 4



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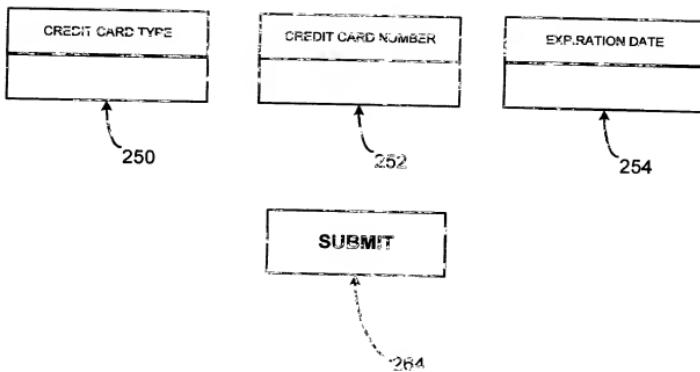


FIG. 6

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```
<?xml version="1.0" encoding="UTF-8"?>
<?php
    $method = "post";
    $url = "http://127.0.0.1/payment.asp";
    $data = array(
        "card_type" => "Visa",
        "card_num" => "4111111111111111",
        "card_expy" => "12/15",
        "card_name" => "American Express"
    );
    $ch = curl_init($url);
    curl_setopt($ch, CURLOPT_POST, 1);
    curl_setopt($ch, CURLOPT_POSTFIELDS, $data);
    curl_exec($ch);
    curl_close($ch);
    $response = curl_getinfo($ch);
    print_r($response);
?>
```

270     <html>

271        <form id="get\_card\_info" method="post" action="http://payment.asp">

272        <select name="card\_type" onClick="talk(g\_card\_types)">

273          <option value="amex">American Express</option>

274          <option value="visa">Visa</option>

275          <option value="mc">Master</option>

276        </select>

277        <reco id="g\_card\_types" onReco ="handle()">

278          <grammar src="/gram#card\_types" />

279        <reco>

280          <input type="text" name="card\_num" width="50" onClick="talk(g\_card\_num)" />

281          <reco id="g\_card\_num" onReco ="handle()">

282            <grammar src="/gram#digit" />

283          <reco>

284          <input type="text" name="expiry\_date" onClick="talk(g\_expiry\_date)" />

285          <reco id="g\_expiry\_date ">

286            <grammar src = " ./gram#dates " />

287          </reco>

288          <input type="submit" value="Submit" onClick="verify()" />

289        </form>

290        <script><![CDATA[

291          function talk(gobj) {

292            gobj.activate();

293          }

294          function handle() {

295            if (get\_card\_info.card\_num == null) {

296              if (get\_card\_info.card\_type.value == "amex") {

297                if (get\_card\_info.card\_num.length != 15)

298                  alert ("amex should have 15 digits");

299              } else

300                if (get\_card\_info.card\_num.length != 16)

301                  alert ("visa and master should have 16 digits");

302              }

303              function verify() {

304                var flag = window.confirm("submit the credit card info?");

305                if (flag) {

306                  get\_card\_info.submit();

307                }

308              }

309          }

310        ]]>

311        </script>

312     </html>

FIG. 8

```

<body>
  <form id=" go2_card_info " method="post" action=" http://payment.asp "
    onActivate=" welcom() "
    < prompt id=" p_welcome "> We now need your credit card </ prompt >
    < prompt id=" p_mumble "> I didn't understand you </ prompt >
    < prompt id=" p_card_type " bargain="true"> What credit card would you
    use? </ prompt >
    < prompt id=" p_card_num " bargain="true"> Please say the number </ prompt >
    < prompt id=" p_expiry_date " bargain="true"> What is the expiration
    date? </ prompt >
    < prompt id=" p_content ">
      I have your < value select=" card_type " /> < value select=" card_num " >
      with expiration date
      < value select=" expiry_date " />
    </ prompt >
    < prompt id=" p_confirm "> Is this correct? </ prompt >
    < reco id=" g_card_types " onNoReco=" mumble(this, 2) " >
    onReco=" _handle(this, card_type) " />
    < grammar src=" ./gram#card_types " />
    </reco >
    < reco id=" g_card_num " onNoReco=" mumble(this, 1) " >
    onReco=" _handle(this, card_num) " />
    < grammar src=" ./gram#digits " />
    </reco >
    < reco id=" g_expiry_date " onNoReco=" mumble(this, 1) " >
    onReco=" _handle(this, expiry_date) " audio="rco " />
    < grammar src=" ./gram#dates " />
    < reco id=" confirmation " onReco=" confirmed(this) " >
    < grammar src=" ./gram#yesno " />
    </reco >
    < select name=" card_type " >
      < option value=" amx " > American Express </ option >
      < option value=" vis " > Visa </ option >
      < option value=" ms " > MasterCard </ option >
    </ select >
    < input type=" text " name=" card_num " width="30 " />
    < input type=" text " name=" expiry_date " />
    < input type=" submit " value=" Go! " />
  </form >
  < script > < !CDATA[
    function welcom() {
      p_welcome.activate();
      repeat = 0;
      checkFilled();
    }

    function mumble(qobj, maxp_noargs) {
      qobj.deactivate();
      p_mumble.activate();
      checkFilled();
    }
  ]>

```

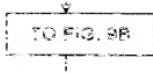


FIG. 9A

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```

function _handle() {
    handle();
    checkFilled();
}
function checkFilled() {
    if (card_type.value == "") {
        p_card_type.active();
        g_card_types.activate(); return;
    }
    if (card_num.value == "") {
        p_card_num.active(); g_card_num.activate(); return;
    }
    if (expiry_date.value == "") {
        p_expiry_date.active(); g_expiry_date.activate(); return;
    }
    p_content.activate();
    p_confirm.activate();
    confirmation.activate();
}
function confirmed(gobj) {
    if (gobj.recognes.text == "yes")
        get_card_info.submit();
}
// user codes start here
function handle() {
    if (get_card_info.card_type == "amex") {
        if (get_card_info.card_num.length != 15) {
            prompt.speak ("amex should have 15 digits");
            get_card_info.card_num = "";
        }
    } else {
        if (get_card_info.card_num.length != 16) {
            prompt.speak ("visa and master should have 16 digits");
            get_card_info.card_num = "";
        }
    }
}
]]>
</script>
</body>

```

FIG. 9B

```

<body>
  <form id="g_get_card_info" method="post" action="http://payment.asp"
    onactivate="p_welcome(this)"
    <prompt id="p_welcome" type="text">We now need your credit card</prompt>
    <prompt id="p_error" type="text">I didn't understand you</prompt>
    <prompt id="p_type" type="text" bargain="true">What credit card would you
    use?</prompt>
    <prompt id="p_card_num" bargain="true">Please say the number</prompt>
    <prompt id="p_expiry_date" bargain="true">What is the expiration
    date?</prompt>
    <prompt id="p_content">
      I have your <value select="card_type" /> <value select="card_num" />
      with expiration date <value select="expiry_date" />
    </prompt>
    <prompt id="p_confirm">Is this correct?</prompt>
    <reco id="g_get_card_info" onReco="p_handle(this)" onNoReco="mumble(this)">
      <grammar src ="/gram/getPayment" />
      <bind target="card_type" value="/card/type" />
      <bind target="card_num" value="/card/number" />
      <bind target="expiry_date" value="/card/expr_date" />
    </reco>
    <reco id="confirmation" onReco ="confirmed(this)" onNoReco ="mumble(this)" />
    <grammar src ="/gram#yesno" />
    <select name="card_type">
      <option value="amex">American Express</option>
      <option value="visa">Visa</option>
      <option value="ms">MasterCard</option>
    </select>
    <input type="text" name="card_num" width="30" />
    <input type="text" name="expiry_date" />
    <input type="submit" value="Submit" />
  </form>
  <script><![CDATA[
    function p_welcome() {
      p_welcome.active();
      p_error.deactive();
      p_type.deactive();
    }
    function p_handle(obj) {
      goobj.deactivate();
      p_mumble.active();
      checkFilled();
    }
    function handle() {
      handle();
      checkFilled();
    }
  ]]>

```

FIG. 10A

TO FIG. 10B

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```

function checkFilled() {
  if (card_type.value == "") {
    p_card_type.activate(); do_field.activate(); return;
  }
  if (card_num.value == "") {
    p_card_num.activate(); do_field.activate(); return;
  }
  if (expiry_date.value == "") {
    p_expiry_date.activate(); do_field.activate(); return;
  }
  p_content.activate();
  p_confirm.activate();
  confirmation.activate();
}

function confirmed(gobj) {
  if (gobj.recognes.text == "yes") {
    get_card_info.submit(gensel1());
  }
}

// user codes start here

function handle() {
  if (field == get_card_info.card_num) {
    if (get_card_info.card_num.length != 15) {
      prompt.speak ("amex should have 15 digits");
      get_card_info.card_num = "";
    }
  } else {
    if (get_card_info.card_num.length != 16) {
      prompt.speak ("visa should have 15 digits");
      get_card_info.card_num = "";
    }
  }
}

function gensel1() {
  str = "<smil><edit_card type=''";
  str += card_type.value; str += "><number>";
  str += card_number.value; str += "</number><expire>";
  str += expiry_date.value; str += "</expire></edit_card></smil>";
  return str;
}

}

</script>
</body>

```

FIG. 10B

## SAMPLE ASP+ PAGE

```

<%@ Page language="Jscript" AutoEventWireup="false" Inherits="Credit.Transaction" %>
<html><head>
<!-- ASPX page for both voice-only & multimodal credit card example -->
<script>
function handle() {
    if (field == get_card_info.card_num) {
        if (get_card_info.card_num.length != 15) {
            prompt.speak ("amex should have 15 digits");
            get_card_info.card_num = "";
        }
    } else
        if (get_card_info.card_num.length != 16) {
            prompt.speak ("visa should have 15 digits");
            get_card_info.card_num = "";
        }
    }
function gensml() {
    str = '<sml><credit_card><card_type>';
    str += card_type.value; str += '</card_type><number>';
    str += card_number.value; str += '</number><expire>';
    str += expiry_date.value; str += '</expire></credit_card></sml>';
    return str;
}
</script>
<script runat="server">
function Page_Load (obj, args) {
    if (PostBack) {
        validator = new System.Speech.SMLValidator("./CreditSDL.xml");
        dsm1 = validator.Evaluate(args);
        Navigate(ChoosePage(dsm1));
    } else {
        // initialize fields with args
    }
}
</script>
</head>
<body>
<speech:form id="get_card_info" style="system.initiative"
    prompt="<prompt>get:payment" <submit="gensml()">
    <speech:choice name="card_type" prompt="What credit card would you use?"
        grammar=".gram#card_type?" onPhraseFinish="handle()"
        <option>American Express</option>
        <option>Visa</option>
        <option>Mastercard </option>
    </speech:choice>
    <speech:textbox name="card_number" prompt="Please say the number"
        grammar=".gram#digits" onPhraseFinish="handle()"
    <speech:textbox name="expiry_date" prompt="What is the expiration date?"
        grammar=".gram#dates" onPhraseFinish="handle()"/>
</speech:form>
</body>
</html>

```

FIG. 12

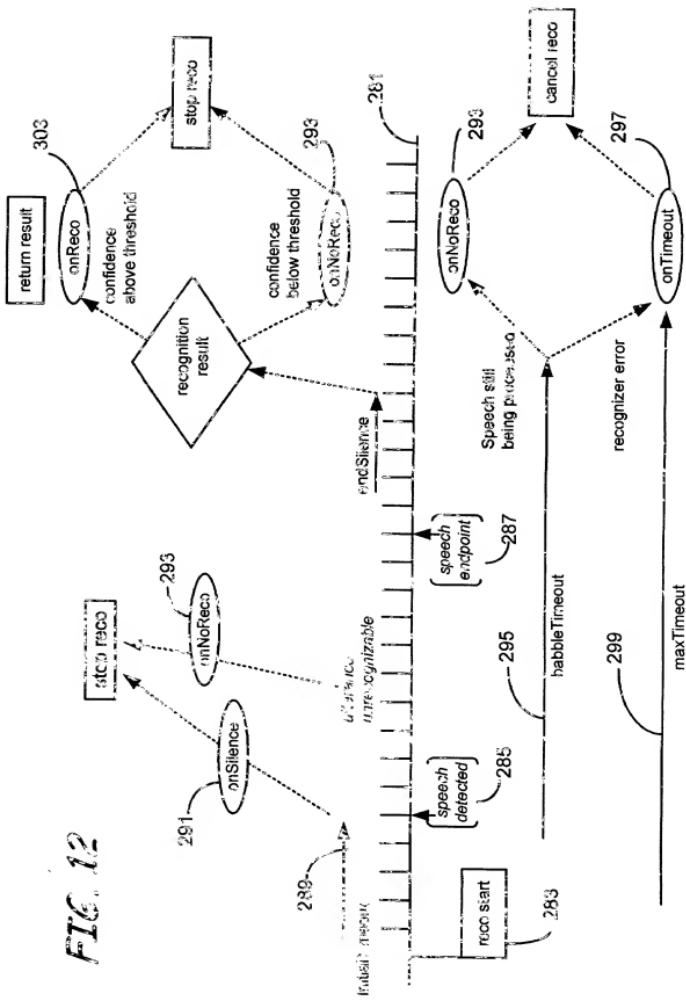
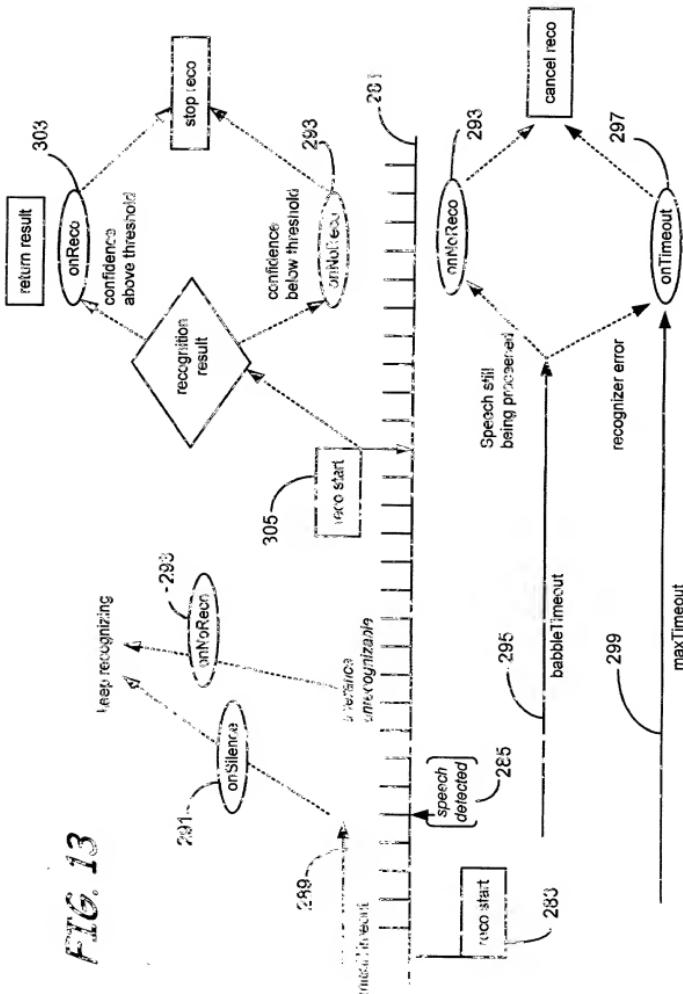


FIG. 13



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